

KCC 4782 (K-C 17,029)
PATENT

REMARKS

Claims 26-41 have been added herein in this Amendment B. Claim 26 is directed to a process for manufacturing a cellulosic paper product, the process comprising forming an aqueous suspension of papermaking fibers; introducing sodium bicarbonate into said aqueous suspension in an amount from about 10 to about 15% by weight of papermaking fiber present in said aqueous suspension; depositing said aqueous suspension onto a sheet-forming fabric to form a wet web; and through-drying said wet web by passing heated air through said wet web. Claim 34 is directed to a process for making a cellulosic paper product, the process comprising forming an aqueous suspension of papermaking fibers; introducing sodium bicarbonate into said aqueous suspension in an amount from about 10 to about 15% by weight of papermaking fiber present in said aqueous suspension; depositing said aqueous suspension onto a sheet-forming fabric to form a wet web, said sodium bicarbonate being introduced into said aqueous suspension prior to depositing said aqueous suspension onto said sheet-forming fabric; and through-drying said wet web by passing heated air through said wet web. Support for these new claims can be found in original dependent claims 5 and 15 and in the instant specification on page 7, lines 23-27. After entry of this Amendment B, claims 1, 3-7, 9-20, and 23-41 will be pending in this case. No new matter has been added by these new claims. Applicants respectfully request reconsideration and allowance of all pending claims.

1. Rejection of Claims 1, 3-4, 7, 9-14, and 17-20 Under 35 U.S.C. §103(a)

Reconsideration is requested of the rejection of claims 1,

KCC 4782 (K-C 17,029)
PATENT

3-4, 7, 9-14, and 17-20 under 35 U.S.C. §103(a) as being unpatentable over Taylor (2,935,437) in view of Sisson (3,303,576).

Claim 1 is directed to a process for making a cellulosic paper product and requires forming an aqueous suspension of papermaking fibers; introducing sodium bicarbonate into the aqueous suspension; depositing the aqueous suspension onto a sheet-forming fabric to form a wet web; and through-drying the wet web by passing heated air through the wet web.

Taylor discloses a process for making a pigment-filled paper of high brightness and opacity while reducing the losses of pigment in the papermaking machine. An aqueous suspension or slurry of papermaking fibers is formed to which is added finely divided hydrated amorphous calcium silicate while maintaining the pH of the slurry of from 4 to 9.2 by addition of an acidic material. Acid salts such as sodium bicarbonate are included among the many disclosed acidic materials. The acidic material is said to react and form a water insoluble salt of the calcium silicate which precipitates and adheres firmly to the papermaking fibers in the slurry to reduce pigment losses in the papermaking machine. After precipitation of the calcium silicate on the cellulosic fiber surfaces, the slurry is sheeted into paper on the wire of a papermaking machine. The web is couched from the wire and subsequently dried, calendered and optionally coated according to conventional procedures (*See* col. 4, lines 48-59).

As conceded by the Office, Taylor fails to disclose any details of the method used to dry the web, much less teach that the web be through-dried by passing heated air through the web as required in claim 1.

Sisson discloses an apparatus for drying porous paper or

KCC 4782 (K-C 17,029)
PATENT

tissue at very high throughput rates. The drying apparatus comprises an air supply means for providing a moving stream of low pressure drying air. This source of a moving stream of drying air at a pressure slightly above that of the air surrounding the major portion is connected to an air inlet duct or plenum located intermediate the web infeed and web outfeed stations. The inlet duct directs the moving stream of drying air into the roll through substantially the length of the uncovered full length minor portion of the roll periphery in a substantially radial direction so that a uniform flow path is established for the drying air. Sisson does not disclose the use of sodium bicarbonate in the papermaking process.

In an attempt to remedy the shortcomings of each reference alone, the Office combines these references together and states that it would have been obvious, to one skilled in the art at the time the invention was made, to combine the teachings of these references, because such a combination would provide improved drying of the formed paper product in the design of Taylor. Applicants respectfully submit that the Examiner's combination of Taylor and Sisson in an attempt to overcome the admitted deficiencies of the primary reference fails to establish a *prima facie* case of obviousness under M.P.E.P. §2142 with respect to the claimed invention.

In order to establish a *prima facie* case of obviousness, there must be some suggestion or motivation to combine the reference teachings. A teaching, suggestion or motivation to combine reference teachings is an essential element of an obviousness rejection. The teaching or suggestion to make the combination must be found in the prior art, not in applicants' disclosure. Moreover, it is clear that even if a combination of

KCC 4782 (K-C 17,029)
PATENT

references teaches each and every element of the claimed invention, in the absence of a motivation to combine those references, a *prima facie* case of obviousness is lacking.
M.P.E.P. §2143.01.

Regarding the motivation requirement, the M.P.E.P. provides ample guidance regarding the burden of the Office. As noted in M.P.E.P. §2142, the burden is on the Examiner to provide some suggestion of the desirability of doing what the inventor has done. To support the conclusion that the claimed invention is directed to obvious subject matter, the references must either (1) expressly or impliedly suggest the claimed invention; or (2) the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references. As recognized by the Office, neither of the references expressly nor impliedly suggest the claimed invention of claim 1. As such, the Office simply states that it would have been obvious to combine the references to provide for improved drying of the web in Taylor. However, when motivation to combine the teachings of the references is not immediately apparent (which is the case with regard to claim 1), it is the duty of the Examiner to explain why the combination of the teaching is proper; that is, the Examiner must provide a convincing line of reasoning. This explanation is lacking with respect to claim 1. It is not sufficient to say that the references could be combined to show the subject matter of claim 1 without more¹; there must be some explanation of why

¹As noted in M.P.E.P. §2143.01, the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. There is no suggestion in this case.

KCC 4782 (K-C 17,029)
PATENT

it would have been obvious to do so. The Office simply states that the combination of references would have been obvious because such a combination would have resulted in improved drying. Applicants respectfully submit that this is insufficient to meet the Examiner's burden. What does "improved drying" mean? Taylor discloses that his web can be dried. There is no disclosure or suggestion in Taylor (nor in Sisson) that the Sisson drying is improved over any other method known in the art with regards to the products of Taylor.

Undoubtedly, Taylor discloses the introduction of sodium bicarbonate into a furnish and Sisson discloses air drying. However, there is no reason one skilled in the art would combine these teachings without using applicants' disclosure as a blueprint. Why would one skilled in the art have been motivated to choose, for combination with sodium bicarbonate, the air drying method disclosed in Sisson over many various other drying methods commonly known in the art? They would not as there is simply no motivation or suggestion to do so.

With all due respect, it appears that the Office has engaged in impermissible hindsight analysis, an analysis that the Federal Circuit has repeatedly cautioned against and ruled improper. Because there is no motivation or suggestion to combine the references cited by the Office, claim 1 is patentable.

Claims 3-4, 7, and 9-11 depend either directly or indirectly from claim 1 and are patentable for the same reasons as claim 1 as well as for the additional elements they require.

Claim 12 is similar to claim 1 and includes the further requirement of introducing sodium bicarbonate into the aqueous suspension prior to depositing the aqueous suspension onto the sheet-forming fabric as is preferred in the practice of the

KCC 4782 (K-C 17,029)
PATENT

present invention. Claim 12 is patentable for the same reasons as claim 1 set forth above, as well as for the additional elements it requires.

Claims 13-14 and 17-20 depend either directly or indirectly from claim 12 and are patentable for the same reasons as claim 12 set forth above, as well as for the additional elements they require.

2. Rejection of Claims 5-6, 15-16, and 23-25 Under 35 U.S.C. §103(a)

Reconsideration is requested of the rejection of claims 5-6, 15-16, and 23-25 under 35 U.S.C. §103(a) as being unpatentable over Taylor (2,935,437) in view of Sisson (3,303,576), and further in view of Espy (5,674,358).

Taylor and Shannon are discussed above. Espy discloses a process for repulping paper. The paper is repulped utilizing a composition comprising a nonchlorinated oxidizing agent and a buffer, such as sodium bicarbonate. In combining Espy along with Sisson and Taylor, the Office states that such a combination would have been obvious to one skilled in the art as it would improve wet strength characteristics of the paper product as disclosed by Espy. Applicants note that claims 5-6 depend from claim 1 which, as described above is patentable. As such, claims 5-6 are patentable as well. Additionally, claims 15-16 depend from claim 12 which, as described above, is patentable. As such, claims 15-16 are patentable as well. Claim 23 is similar to claims 1 and 12 and is patentable for the same reasons as claims 1 and 12, as well as for the additional elements it requires. As such, claims 24-25, which depend from claim 23, are patentable as well.

KCC 4782 (K-C 17,029)
PATENT

Notwithstanding the fact that the rejected claims are patentable as discussed above, the combination of these three references by the Office is improper. As set forth above, the combination of Taylor and Sisson is improper. As such, by definition, the additional combination of Espy is also improper.

3. Rejection of Claims 1, 3-7, 9-20, and 23-25 Under 35 U.S.C. §103(a)

Reconsideration is requested of the rejection of claims 1, 3-7, 9-20, and 23-25 under 35 U.S.C. §103(a) as being unpatentable over Espy (5,674,358) in view of Sisson (3,303,576).

Claim 1 is discussed above.

Both Espy and Sisson are discussed above. Similar to Taylor above, Espy fails to disclose any details of the method used to dry the web, much less teach that the web be through-dried by passing heated air through the web as required by claim 1.

Again, the Office attempts to overcome the shortcomings of each reference alone by combining the references together. The Office states that it would have been obvious, to one skilled in the art at the time the invention was made, to combine the teachings of these references, because such a combination would provide improved drying of the formed paper product in the design of Espy. However, why would one skilled in the art have been motivated to choose, for combination with sodium bicarbonate, the air drying method disclosed in Sisson over another drying method commonly known in the art? They would not as there is simply no motivation or suggestion to do so. As stated above, it is not sufficient to say that the references could be combined to show the subject matter of claim 1 without more; there must be some explanation of why it would have been obvious to do so. As such

KCC 4782 (K-C 17,029)
PATENT

claim 1 is patentable.

Claims 3-7 and 9-11 depend directly or indirectly from claim 1. As such, claims 3-7 and 9-11 are patentable for the same reasons as claim 1, as well as for the additional elements they require.

Claim 12 is discussed above. Claim 12 is similar to amended claim 1 and is patentable for the same reasons as claim 1, as well as for the additional elements it requires.

Claims 13-20 depend directly or indirectly from claim 12 and are patentable for the same reasons as for claim 12, as well as for the additional elements they require.

Claim 23 is discussed above. Claim 23 is similar to amended claim 1 and is patentable for the same reasons as claim 1, as well as for the additional elements it requires.

Claims 24-25 depend directly from claim 23 and are patentable for the same reasons as for claim 23, as well as for the additional elements they require.

4. Comments Regarding New Claims 26-41.

New claim 26 is substantially similar to pending claim 1 and further requires the sodium bicarbonate to be introduced into the aqueous suspension in an amount from about 10 to about 15% by weight of papermaking fiber present in the aqueous suspension.

In addition to the reasons set forth above relating to claim 1, claim 26 is patentable over the cited references as the references fail to disclose the addition of sodium bicarbonate in an amount from about 10 to about 15% by weight of papermaking fiber present in the aqueous suspension. Although Taylor does list sodium bicarbonate as one acid material that can be introduced into the pulp slurry, Taylor fails to disclose the

KCC 4782 (K-C 17,029)
PATENT

amounts of sodium bicarbonate required to maintain the desired pH, and fails to disclose or discuss the pH chemistry at length. Additionally, none of the Examples found in Taylor used sodium bicarbonate as the acidic material. Furthermore, in the working Examples disclosed, which use aluminum sulfate as the acidic material, the aluminum sulfate is added only in minor amounts. These amounts are far below the required 10 to 15% sodium bicarbonate required in claim 1.

Claim 26 is patentable over Taylor in combination with Sisson because Sisson fails to overcome the shortcomings of Taylor. Similar to Taylor, Sisson fails to disclose adding sodium bicarbonate into an aqueous suspension in an amount from about 10 to about 15% by weight of papermaking fiber present in said aqueous suspension. More specifically, the Sisson reference fails to disclose any use of sodium bicarbonate in its apparatus for drying porous paper and tissue.

Similar to Sisson and Taylor, Espy fails to disclose introducing sodium bicarbonate into aqueous suspension in an amount from about 10 to about 15% by weight of papermaking fiber present in said aqueous suspension. The Office states that Espy does disclose a process of repulping paper wherein 3.60 grams of sodium bicarbonate (i.e., 18% by weight of papermaking fiber) is introduced into an aqueous suspension of 1.5 liters of water containing 20 grams of paper. While Applicants agree that Espy discloses introducing 18% by weight of papermaking fiber, Applicants assert there is no disclosure of introducing sodium bicarbonate into an aqueous suspension in an amount from about 10 to about 15% by weight of papermaking fiber present in said aqueous suspension. Specifically, no where does the Espy reference disclose or suggest introducing sodium bicarbonate (or

KCC 4782 (K-C 17,029)
PATENT

any buffer) in an amount from about 10 to about 15% by weight of papermaking fiber. Furthermore, none of the 14 working Examples disclose an amount of sodium bicarbonate in an amount between 10 to 15% by weight papermaking fiber.

Because none of the cited references, alone, or in combination, set forth an enabling disclosure for introducing sodium bicarbonate into an aqueous suspension in an amount from about 10 to about 15% by weight of papermaking fiber present in said aqueous suspension, new claim 26 is patentable.

Claims 27-33 depend either directly or indirectly from claim 26 and thus are patentable for the same reasons as claim 26 set forth above, as well as for the additional elements they require.

New claim 34 is similar to new claim 29 and further requires the sodium bicarbonate to be introduced into the aqueous suspension prior to depositing said aqueous suspension onto said sheet-forming fabric. As such, claim 34 is patentable for the same reasons as claim 26 as well as for the additional elements it requires.

Claims 35-41 depend either directly or indirectly from claim 34 and thus are patentable for the same reasons as claim 34 set forth above, as well as for the additional elements they require.

In view of the above, Applicants respectfully request favorable reconsideration and allowance of all pending claims. The Commissioner is hereby authorized to charge any fee deficiency in connection with this Amendment B to Deposit Account Number 19-1345 in the name of Senniger, Powers, Leavitt & Roedel.

KCC 4782 (K-C 17,029)
PATENT

Respectfully Submitted,



Christopher M. Goff, Reg. No. 41,785
SENNIGER, POWERS, LEAVITT & ROEDEL
One Metropolitan Square, 16th Floor
St. Louis, Missouri 63102
314-231-5400

CMG/JMB/dmt
Via Facsimile (703) 872-9306